



# Community Release Update

LAD 2016

Peter Jones HPDD, Intel  
OpenSFS Lustre\* Working Group

# OpenSFS Lustre Working Group

Lead by Peter Jones (Intel) and Sarp Oral (ORNL)

- Took over from Chris Morrone Nov 2015

Central forum for all Lustre development matters

- Oversees entire Lustre development cycle
- Maintains the roadmap
- Plans major releases
- Collects requirements for future Lustre features
- Sets priorities for test matrix

For more information visit the wiki

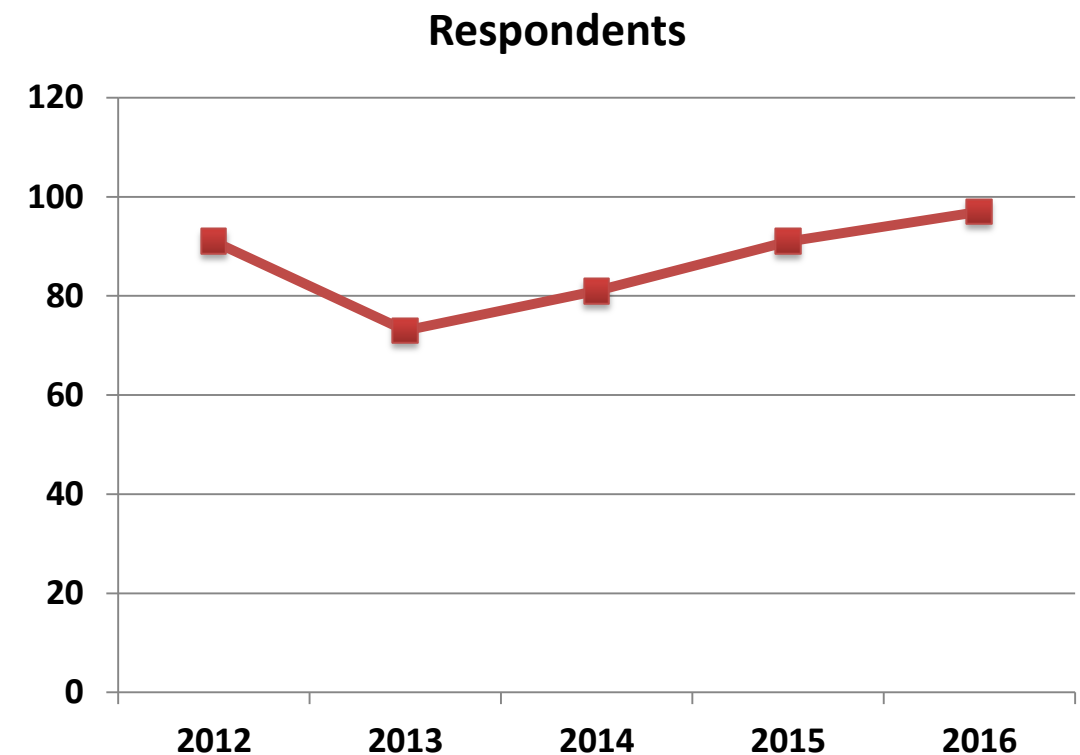
[http://wiki.opensfs.org/Lustre\\_Working\\_Group](http://wiki.opensfs.org/Lustre_Working_Group)

# OpenSFS Tree Contract Complete

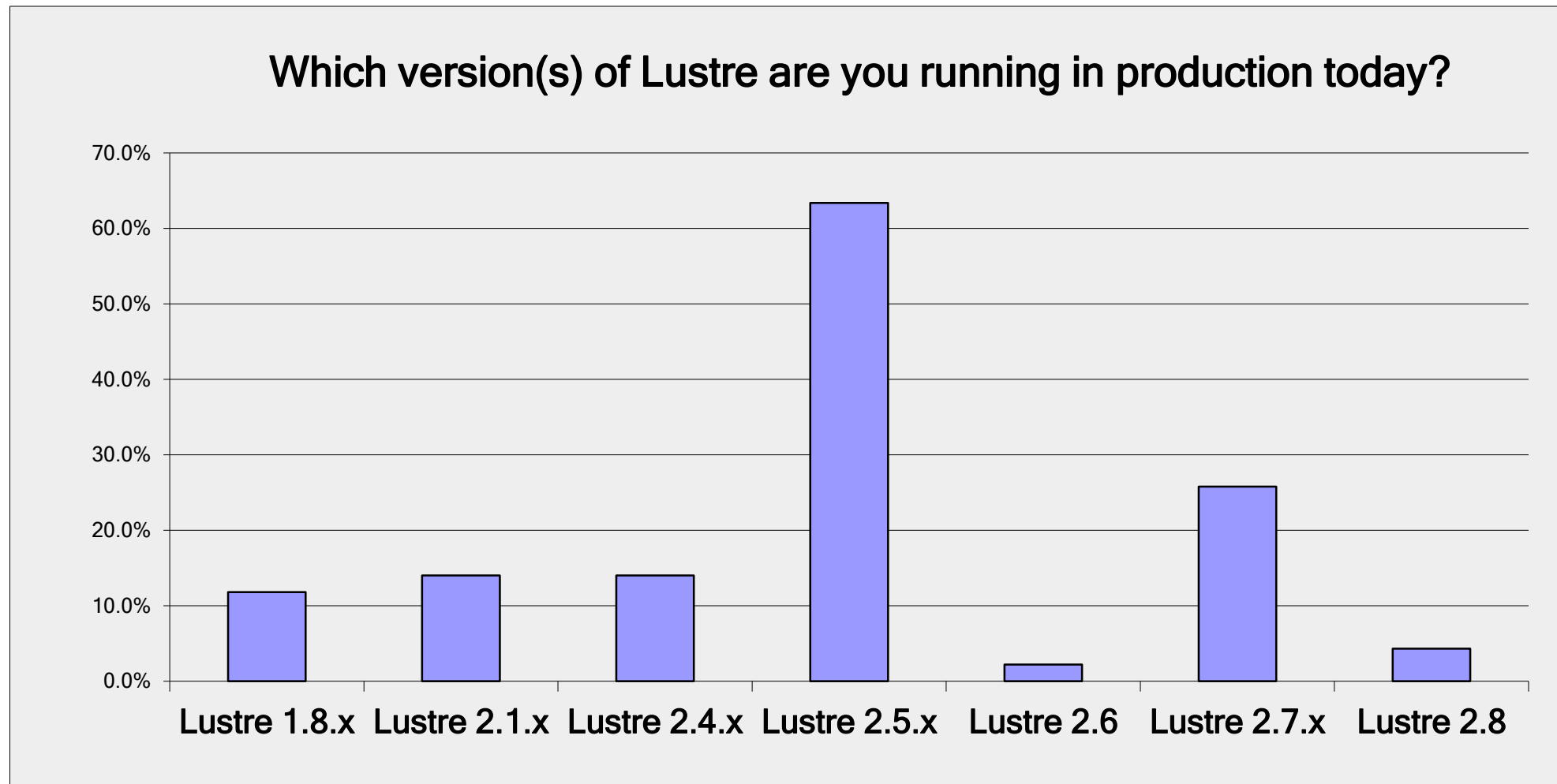
- Next talk will cover more about revised structure of OpenSFS
- OpenSFS no longer providing financial contributions towards costs of producing community releases
  - Tree contract ran from Nov 2011 – June 2016
  - [http://wiki.opensfs.org/Contract\\_SFS-MAINT-001](http://wiki.opensfs.org/Contract_SFS-MAINT-001)
- Community releases continue to be coordinated by LWG

# Community Survey

- Has been running for 5 years
- LWG devises questions
- Useful for tracking trends in Lustre usage
- Highest number of respondents yet for 2016 survey (97)
- Full details available at [http://wiki.opensfs.org/Lustre\\_Community\\_Survey](http://wiki.opensfs.org/Lustre_Community_Survey)



# Community Survey - Versions



- Lustre 2.5.x remains the dominant version in production usage
- Strong adoption of more current releases (even 2.8 before GA)
- Lustre 1.8.x usage finally dwindling

# Lustre Quality

- Well-established release validation practices
  - Automated functional regression tests across test matrix
  - SWL runs on Hyperion
  - Execution of feature test plans
- Continuing to evolve testing practices
  - Fault injection
  - Soak testing
  - Static code analysis tools
- Drawing on expertise from outside Lustre community
  - Influence from upstream Linux community
  - Input from Intel software experts



# Lustre 2.8

- GA March 2016
  - Originally targeted for Sept 2015
- Strong feature set
  - RHEL\* 7.2 server support (LU-5022)
  - DNE Phase 2 (LU-3534)
  - LFSCK Phase 4 (LU-6361)
  - Client Metadata RPC Scaling (LU-5319)
- Number of production sites on this release
  - Lustre on ZFS\* perf and newer kernel support drivers
- [http://wiki.lustre.org/Release\\_2.8.0](http://wiki.lustre.org/Release_2.8.0)

# Lustre 2.9

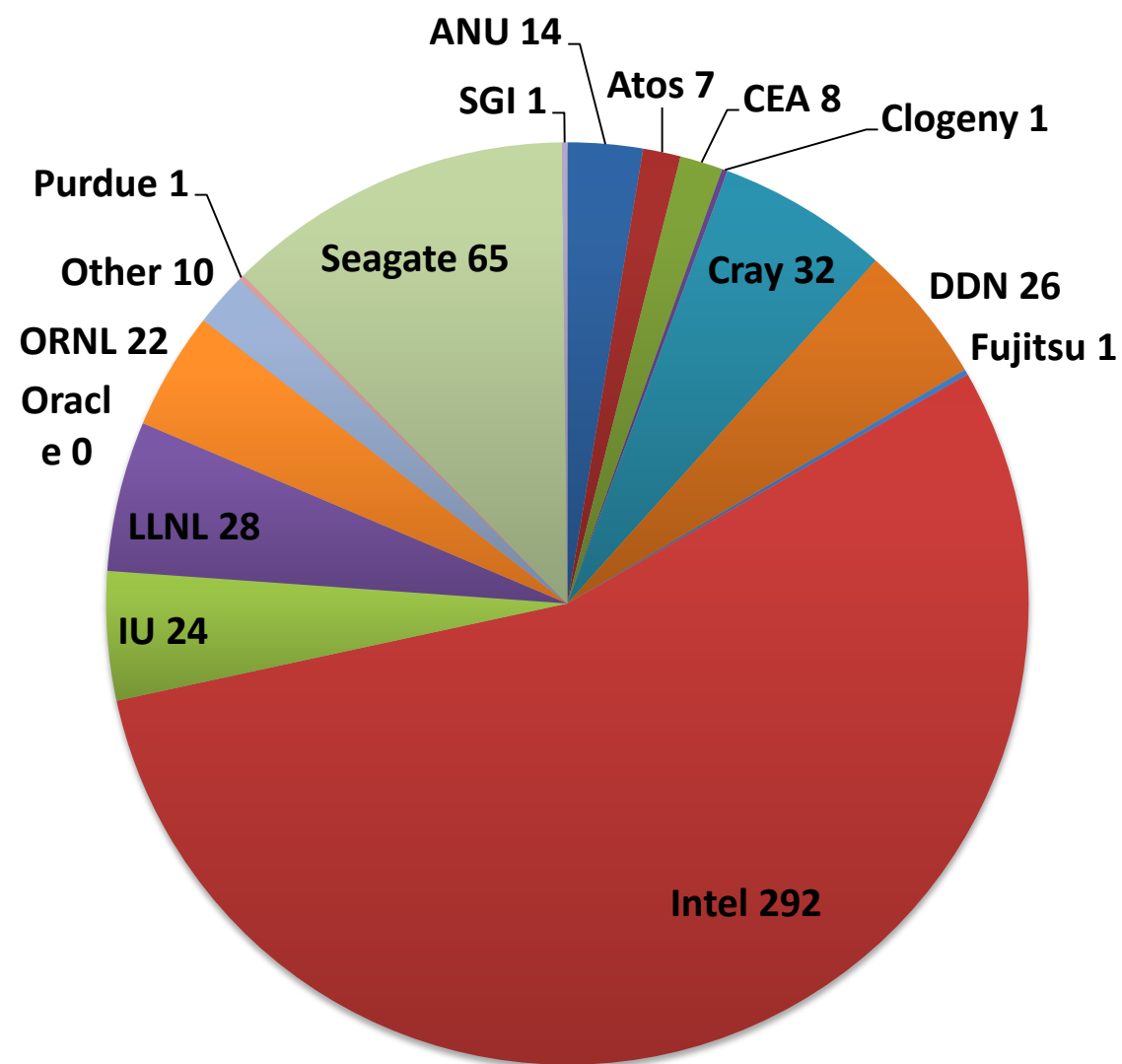
- Targeted GA August 2016
  - In release testing atm; hopefully out soon
  - [http://wiki.lustre.org/Release\\_2.9.0](http://wiki.lustre.org/Release_2.9.0)
- Will support RHEL 7.2 servers/clients and SLES\*12 SP1 clients
  - Dropping support for RHEL 6 and SLES11
- Interop/upgrades from Lustre 2.8 servers/clients
- A number of new features targeted for this release

| UID/GID Mapping (LU-3291)                      | Shared Key Crypto (LU-3289)              |
|--|--|
| Subdirectory Mounts (LU-28)                    | Weak updates (LU-5614)                   |
| Large Block IO (16MB IO for ldiskfs) (LU-7990) | Server side advise and hinting (LU-4931) |



# Lustre 2.9 – Contributions So Far

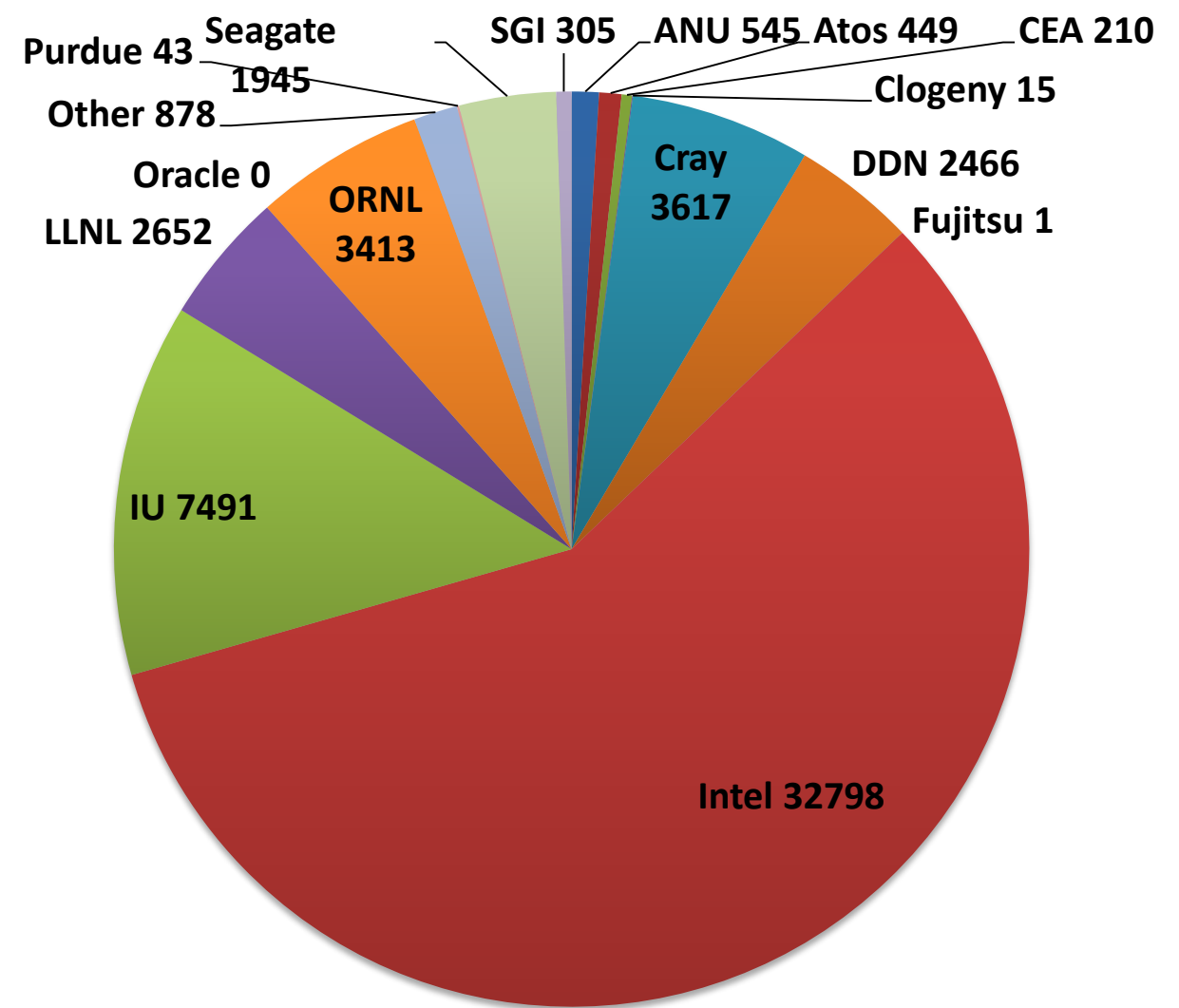
## Number of Commits



Statistics courtesy of Chris Morrone (LLNL)

Source: <http://git.whamcloud.com/fs/lustre->

## Lines of Code Changed

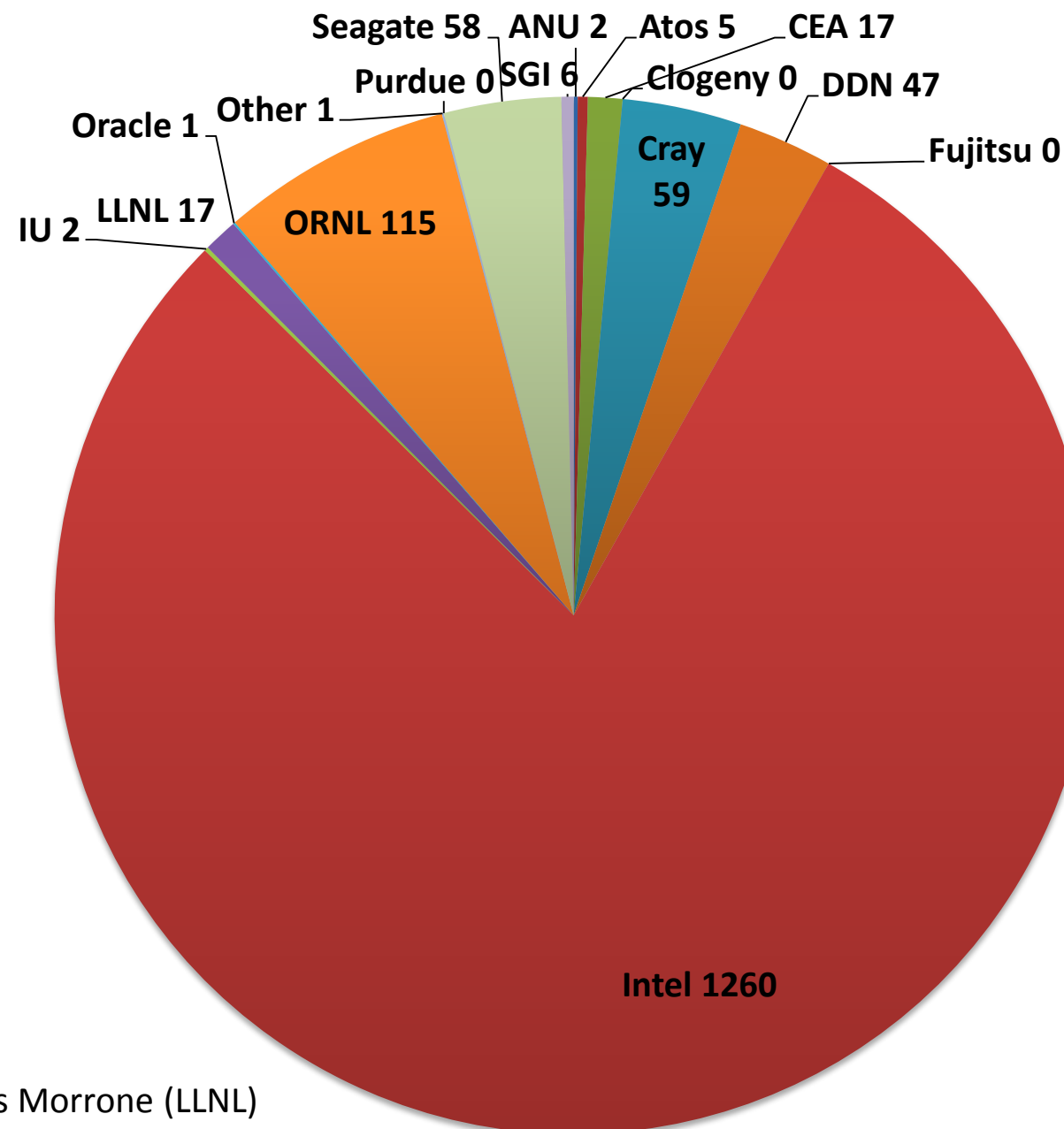


Aggregated data by organization between 2.8.50 and 2.8.57



\*Other names and brands may be claimed as the property of others.

# Lustre 2.9 – Reviews So Far



Statistics courtesy of Chris Morrone (LLNL)

Aggregated data by organization between 2.8.50 and 2.8.57 tags

Source: <http://git.whamcloud.com/fs/lustre-release.git/shortlog/refs/heads/master>

# Lustre Version Statistics

| Version | Commits | LOC  | Developers | Organizations |
|---------|---------|------|------------|---------------|
| 1.8.0   | 997     | 291K | 41         | 1             |
| 2.1.0   | 752     | 92K  | 55         | 7             |
| 2.2.0   | 329     | 58K  | 42         | 10            |
| 2.3.0   | 586     | 87K  | 52         | 13            |
| 2.4.0   | 1123    | 348K | 69         | 19            |
| 2.5.0   | 471     | 102K | 70         | 15            |
| 2.6.0   | 885     | 147K | 76         | 14            |
| 2.7.0   | 741     | 193K | 65         | 15            |
| 2.8.0   | 992     | 147K | 92         | 17            |
| 2.9.0** | 522     | 57K  | 90         | 16            |

Statistics courtesy of Chris Morrone (LLNL)  
Source: <http://git.whamcloud.com/fs/lustre-release.git>

\*\* Data until 2.8.57

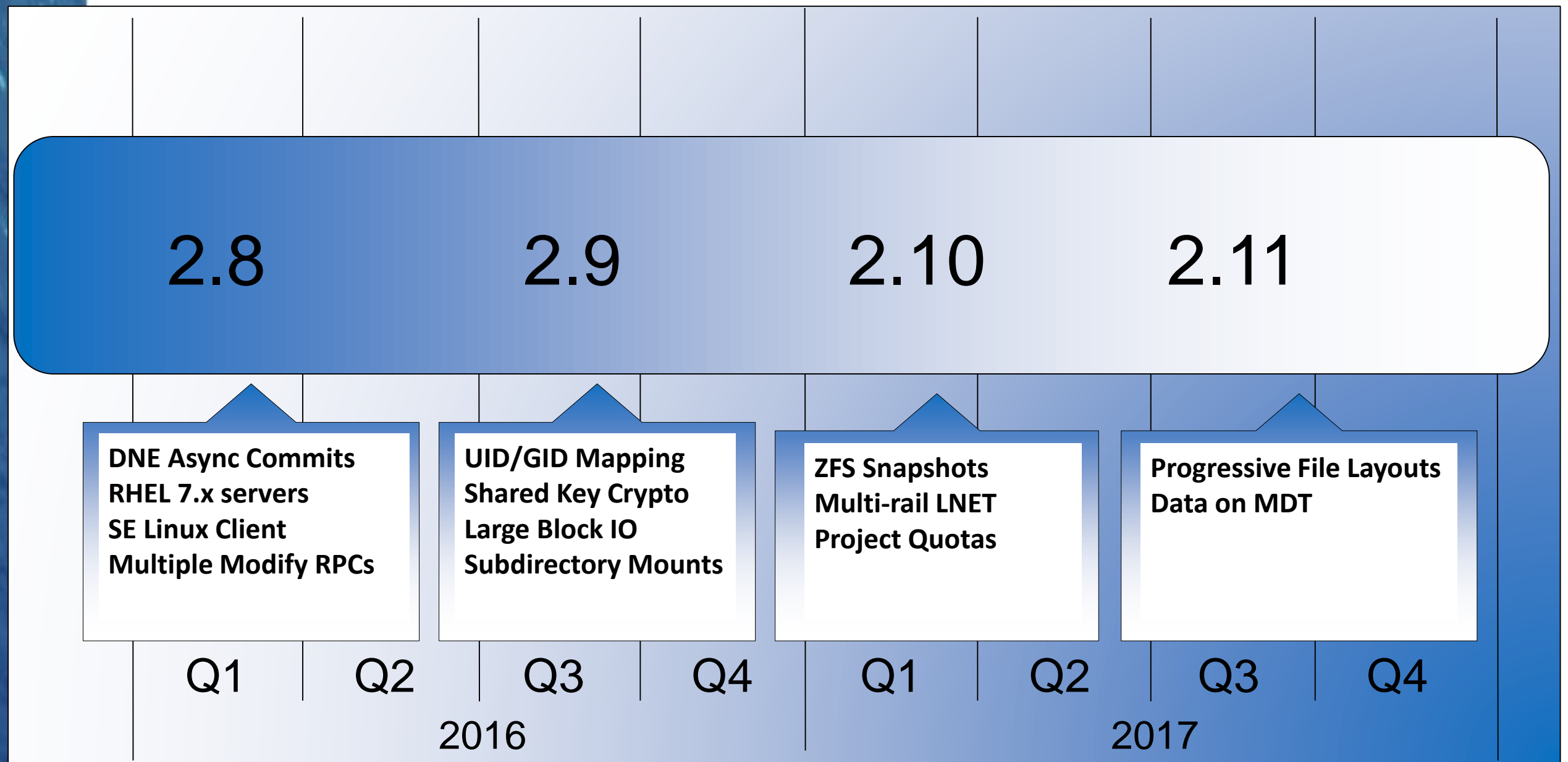


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# Lustre 2.10 and Beyond

- Many interesting long term features in development
  - Multi-rail LNET
  - Progressive File Layouts
  - Project quotas
- Full list maintained on lustre.org wiki
  - <http://wiki.lustre.org/Projects>
- Highlights and timelines shown on community roadmap
  - <http://lustre.org/roadmap/>

# Community Release Roadmap



Estimates are not commitments and are provided for informational purposes only

Fuller details of features in development are available at <http://wiki.lustre.org/Projects>

Last updated: June 15<sup>th</sup> 2016



# Lustre Release Documentation

- Latest version of user documentation dynamically available to download
  - <http://lustre.opensfs.org/documentation/>
- See Richard Henwood's LUG 2013 LUG presentation for details on how to contribute
  - [http://cdn.opensfs.org/wp-content/uploads/2013/05/Henwood\\_manual\\_LUG13\\_FINAL\\_v2.pdf](http://cdn.opensfs.org/wp-content/uploads/2013/05/Henwood_manual_LUG13_FINAL_v2.pdf)
- If you know of gaps then please open an LUDOC ticket
  - If you have not got time to work out the correct format to submit then unformatted text will provide a starting point for someone else to complete
- Scope to create more dynamic content on lustre.org



# Summary

- Strong community adoption of recent releases
- Lustre 2.8 is GA and being used in production
- Lustre 2.9 should be GA in the near future
- Some interesting developments in progress for 2.10 and beyond
- Plenty of options for those interest in participating

# Thank you

**Open Scalable File Systems, Inc.**

3855 SW 153rd Drive  
Beaverton, OR 97006  
Ph: 503-619-0561  
Fax: 503-644-6708  
[admin@opensfs.org](mailto:admin@opensfs.org)



[www.opensfs.org](http://www.opensfs.org)